



## CT Scans (continued)

There are other types of CT scanners known as Cone Beam CT scanners (CBCT) that can provide similar images and can be converted to the many commonly used software programs available for analysis by your dentists. CBCT scanners use significantly less radiation and may be available to you at an imaging center or in your surgeon's office. Both types of CT scanners provide very detailed, three-dimensional images that can accurately measure the height and width of available bone, as well as locate the nearby anatomic structures (such as the maxillary sinuses and mandibular nerves) that the surgeon must be mindful of during surgery.

Because all radiation dosages are cumulative, and the potentially harmful effects of excessive radiation are well documented, the benefits of improved diagnostic imaging must be weighed against the risks of radiation exposure for your particular needs and circumstances.



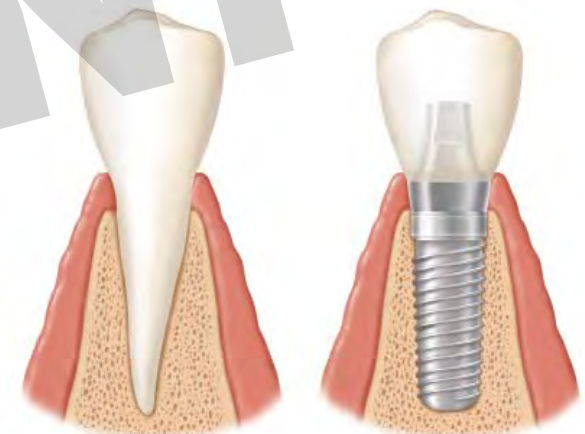
## What is the overall success rate for dental implants?

Despite decades of clinical and scientific research, dental implants do not have a 100% success rate. However, the success rates have improved dramatically since the introduction of dental implant surgery and the dental profession can proudly report success rates well above 90% for most implant patients. Similarly, long-term success rates are in the high 90% range and are likewise improving. When a dental implant has not successfully integrated, it may need to be removed, as it cannot easily be "converted" to osseointegrate. Your dentist will give you best advice about this. A replacement implant can be placed but it may require some months of healing time and possibly bone augmentation (repair by means of grafting). Likewise, if a previously placed implant has lost significant amounts of supporting bone, there are currently no treatments that can predictably restore the lost bone after it has been in function in the mouth.

## Patient Care Introduction to Dental Implants

### What is a dental implant?

A dental implant is a prosthetic replacement for a missing tooth. Natural teeth consist of the crown and the root. The crown is the visible section that is covered with white enamel. Supporting the crown is the tooth root which extends into the jawbone. The root is the part of the tooth that is effectively replaced by an implant.



Natural Tooth

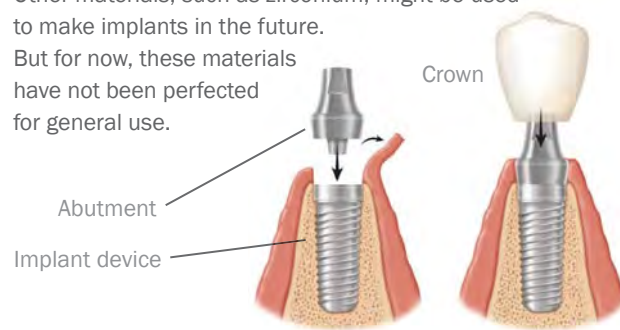
Implant

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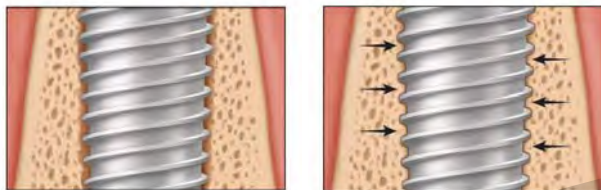
There are commonly three parts to what is described as an implant – the implant device itself (which is inserted directly into the bone), the abutment – the piece that connects the implant device to the third part – the overlying crown or denture. Today’s implants are predominantly made of titanium, a metal that is bio-compatible and offers strength and durability as well as a unique property that allows it to fuse directly to bone – the process known as **osseointegration**. Other materials, such as zirconium, might be used to make implants in the future.

But for now, these materials have not been perfected for general use.



## What is Osseointegration?

Dental implants work by a process known as osseointegration, which occurs when bone cells attach themselves directly to the titanium surface, essentially locking the implant into the jaw bone. This process was first discovered by a Swedish researcher, Prof. Dr. Per-Ingvar Brånemark, in the 1960’s.



## What is an osseointegrated implant?

Osseointegrated implants can be used to support prosthetic tooth replacements of various designs and functionality, replacing anything from a single missing tooth to a full arch (all teeth in the upper and/or lower jaw). These replacement teeth are usually made to match the natural enamel color of each patient which offers a completely natural appearance and a whole new smile.

## Are dental implants for me?

Most likely, if you are reading this, you or someone you know has lost teeth. Whether they were lost through an accident, disease or decay, dental implants are an excellent tooth replacement option for nearly everyone.

Dental implants can be used when:

- A single tooth is missing – instead of a bridge
- Several teeth are missing – instead of bridges or partial dentures
- All teeth are missing – instead of dentures

Dental implants are strong and stable and allow you to eat most foods, depending on the type of implant restoration. They look and generally feel like your own natural teeth. They give you back your smile.

## How do I know if I am a suitable candidate for dental implants?

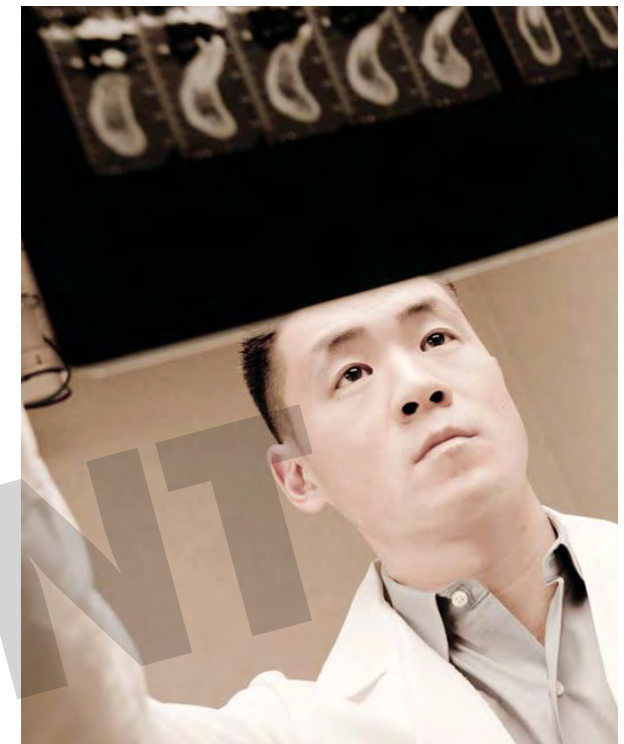
If you feel that dental implants could be a viable option for you, contact your dentist to schedule an oral exam. It is not acceptable to proceed with implant treatment if there are areas of untreated disease of teeth, gums or bone, as these can affect the success of your implant surgery as well as the integration and maintenance of the implant itself.

Therefore, a thorough full-mouth examination (including teeth and gums) should be performed. This allows the dentist to also assess your bite (occlusion) which is important to the success of your implant restoration.

## What can I expect to happen during the preliminary examination process?

All members of your dental team will need x-rays of your jaw, paying special attention to the area which will be treated. A general review of these x-rays will allow the dentist to carefully

inspect for any additional teeth or areas in the bone that require treatment (whether for implants or otherwise). Many dentists will use a panoramic radiograph, which shows all of the upper and lower jaws’ bones and teeth, to diagnose other dental and bone pathology. These can also be used to assess the height of available bone and the relation and position of other anatomic structures – all considered as part of the overall analysis for implants.



## CT Scans

The most accurate form of x-ray imaging currently available is the CT scan, commonly known as a CAT scan. Medical CT scanners are often used by dentists to diagnose, analyze and devise treatment plans for implant surgery, so you may be referred to a radiologist during the diagnosis process.